**Screening and Evaluation Tools for Dyslexia**

**Anne-Marie Kimbell, PhD**
**Solutions Analyst**
**Pearson Clinical**

1

## Disclosure

Dr. Kimbell is employed by Pearson publisher of many of the instruments that will be mentioned today.

Pearson

Screening and Evaluation Tools for Dyslexia

2

**1. Reversing letters and numbers means Dyslexia**
**True or False**

**2. What percentage of the population has Dyslexia?**
**A. 1%**
**B. 5%**
**C. 12%**
**D. 20%**

Pearson

3

## Objectives:

1. Identify subtypes of reading disorders, including dyslexia.

2. Discuss best practices in identifying dyslexia.

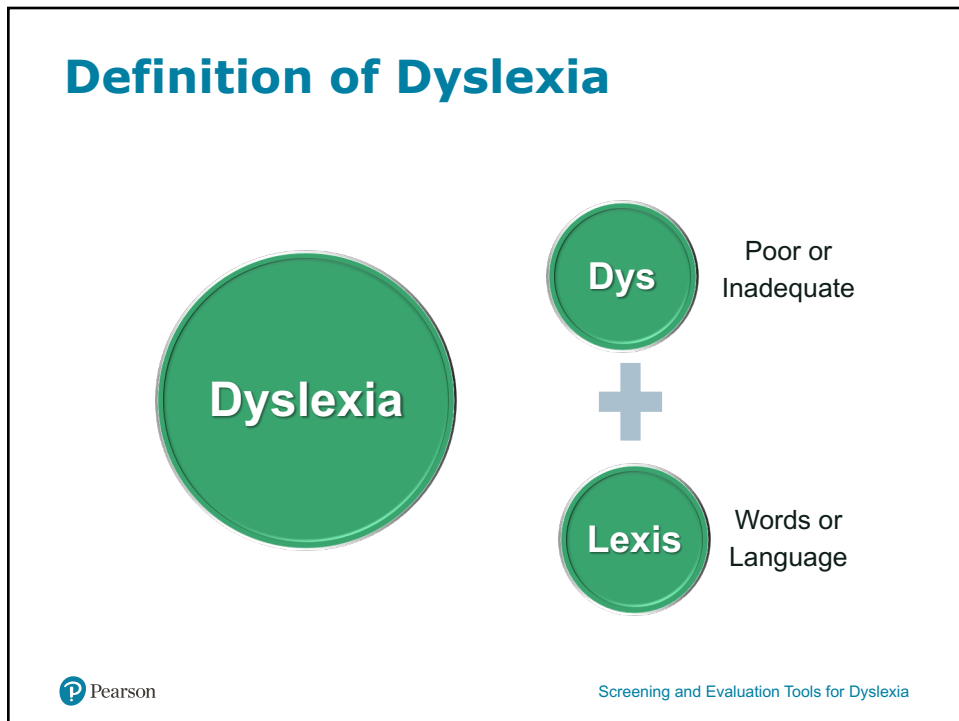3. Identify steps for an effective process to assess dyslexia in schools.
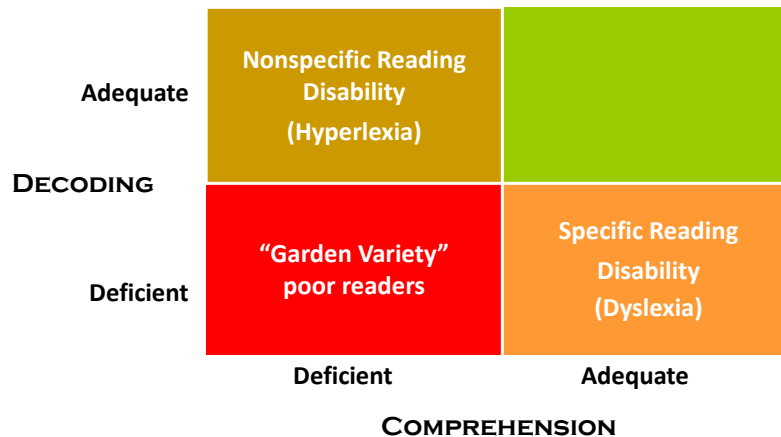
Pearson

Screening and Evaluation Tools for Dyslexia

4

5

## Definition of Dyslexia



**Dyslexia**

**Dys** — Poor or Inadequate

**+**

**Lexis** — Words or Language

Pearson

Screening and Evaluation Tools for Dyslexia

6

# Three Types of Struggling Readers

|  | Deficient | Adequate |
|---|---|---|
| **Adequate**<br>DECODING | Nonspecific Reading Disability (Hyperlexia) | |
| **Deficient** | "Garden Variety" poor readers | Specific Reading Disability (Dyslexia) |

**COMPREHENSION**

Pearson
ALWAYS LEARNING

Screening and Evaluation Tools for Dyslexia

7

# What is Dyslexia?

- Specific learning disability
- Neurological in origin
- Characterized by difficulties with
  - accurate and/or fluent word recognition,
  - poor spelling, and
  - poor decoding abilities.

(IDA; Adopted by the Board of Directors: November 12, 2002)

Pearson

Screening and Evaluation Tools for Dyslexia

8

4

# IDA: Definition of Dyslexia

Difficulties typically result from a deficit in the phonological component of language.

Difficulties are often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction.

Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.

(IDA; Adopted by the Board of Directors: November 12, 2002)

Ⓟ Pearson
Screening and Evaluation Tools for Dyslexia

9

# Another Conceptualization of Dyslexia

Unexpected difficulty in reading for an individual who has the intelligence to be a much better reader.

Due to a difficulty in getting to the individual sounds of spoken language which affects the ability to speak, read, spell, and often learn a language.
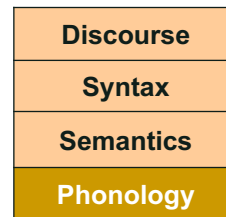
(Cassidy-Mikulski Senate Resolution 275, 2015)

Ⓟ Pearson
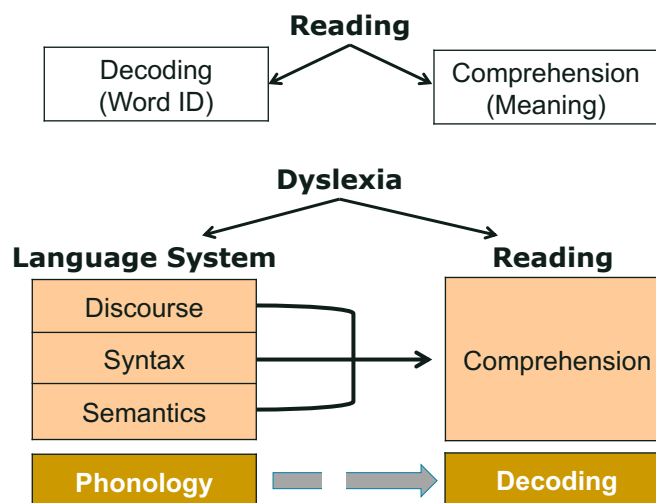Screening and Evaluation Tools for Dyslexia

10

## Shaywitz (2003)

. . . "the deficit responsible" for dyslexia "resides in the language system."

"Dyslexia . . . a localized weakness within . . . the phonologic module."

| Discourse |
| Syntax |
| Semantics |
| **Phonology** |

Pearson

Screening and Evaluation Tools for Dyslexia

11

## Shaywitz (2003)



11

Pearson

Screening and Evaluation Tools for Dyslexia

12

## Phonological Awareness

Identify
sound units
(phonemes)
in spoken
words

Identify and
work with
onsets and
rimes in
syllables

Identify and
work with
syllables in
spoken
words

Identify and
make oral
rhymes

Children are ready to read when they can identify and manipulate larger parts of spoken language and when they are aware of other aspects of sounds.

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia

13

## A Hybrid Model of Dyslexia Identification Considers . . .

Multiple Sources of Information

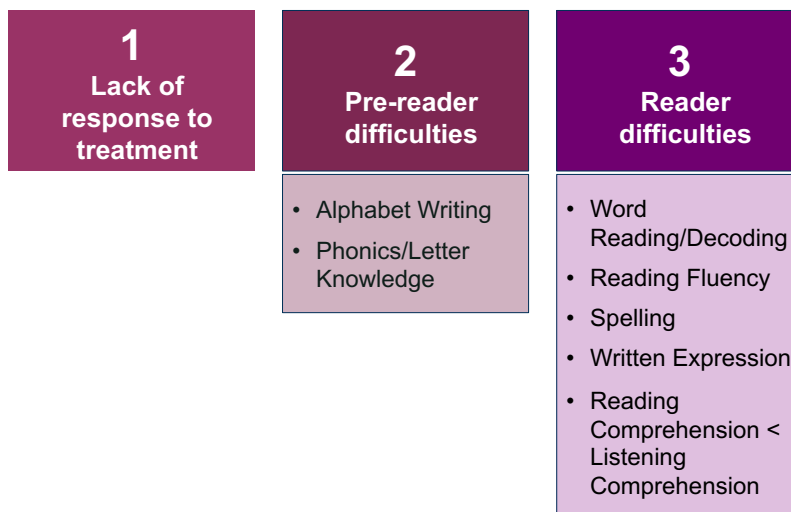Degree to which the student has responded to treatment

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia

14

# Hybrid Model of Dyslexia Identification

SYMPTOMS

CAUSES/ CORRELATES

RISK FACTORS

Screening and Evaluation Tools for Dyslexia

15

# Symptoms

| 1 Lack of response to treatment | 2 Pre-reader difficulties | 3 Reader difficulties |
|---|---|---|
| | • Alphabet Writing<br>• Phonics/Letter Knowledge | • Word Reading/Decoding<br>• Reading Fluency<br>• Spelling<br>• Written Expression<br>• Reading Comprehension < Listening Comprehension |

Screening and Evaluation Tools for Dyslexia

16

# Causes/Correlates

| Phonological Processing | Processing Speed |
|---|---|
| Rapid Automatic Naming | Associative Memory |
| Auditory Working Memory | Long-term Storage and Retrieval |
| | Orthographic Processing |

P Pearson

Screening and Evaluation Tools for Dyslexia

17

# Risk Factors

- Family History

- Language Impairment/
  Poor Receptive Vocabulary

P Pearson

Screening and Evaluation Tools for Dyslexia

18

## Differences in Vocabulary Acquisition
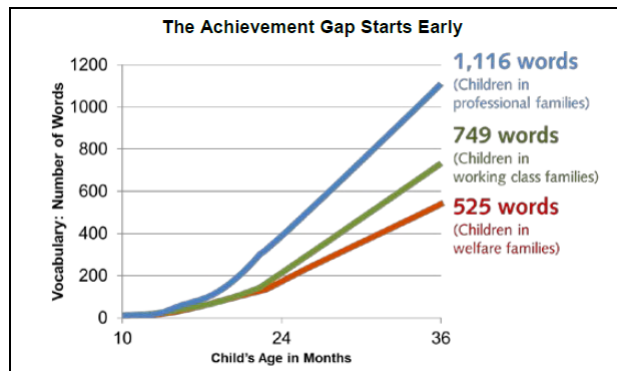


(Adapted from Hart & Risley)

Screening and Evaluation Tools for Dyslexia

19

A weakness in

**oral language**

can adversely affect

**learning to read**

which, in turn, will affect

**reading to learn**.

Screening and Evaluation Tools for Dyslexia

20

## Possible Strengths

Fluid Reasoning and Problem Solving

Oral Language

Math

Screening and Evaluation Tools for Dyslexia

21

## Pearson Dyslexia Toolkit

Screening Tools

Diagnostic Assessment Tools

Progress Monitoring Tools

Intervention Tools

Screening and Evaluation Tools for Dyslexia

22

# Pearson Dyslexia Toolkit

| SCREEN | ASSESS | INTERVENE | MONITOR |
|---|---|---|---|
| Shaywitz DyslexiaScreen™ | Kaufman Test of Educational Achievement™, Third Edition (KTEA™-3) Comprehensive Form | Intervention Guide for LD (Learning Disability) Subtypes | Review360® for SLPs |
| aimswebPlus® | Process Assessment of the Learner, Second Edition™: Diagnostics for Reading and Writing (PAL™-II Reading and Writing) | Process Assessment of the Learner (PAL™) reading and writing lessons | aimswebPlus |
| Kaufman Test of Educational Achievement™, Third Edition (KTEA™-3) Brief Form | Wechsler Individual Achievement Test®, Third Edition (WIAT®-III) | KTEA-3 teaching objectives and intervention statements WIAT-III intervention goal statements | Growth Scale Value (GSV) Scores |
| Dyslexia index scores from the KTEA-3 and WIAT®-III | Woodcock Reading Mastery Tests™, Third Edition (WRMT™-III) | SPELL-Links™ to Reading & Writing SPELL-Links Class links for Classrooms™ | |

P Pearson

Screening and Evaluation Tools for Dyslexia

23



Screening

24

**Shaywitz**
*DyslexiaScreen*™

### Shaywitz DyslexiaScreen

- Brief teacher <u>survey</u> for identifying students at-risk for dyslexia.
- Intended for use with students experiencing academic difficulties, <u>but can also be used to screen all students</u>.
- Therefore…universal or Tier 2 capable
- 5 minutes (or less) using an online form
- Digital administration and scoring
- The classification accuracy data indicate moderately high sensitivity and specificity

Ⓟ Pearson                                    Screening and Evaluation Tools for Dyslexia

25

---

**Shaywitz**
*DyslexiaScreen*™

### What does the Shaywitz measure?

Observational Ratings Analyze:
  1. Phonological,
  2. Linguistic, and
  3. Academic performance

Ratings based on classroom teacher observations
- Subjectivity <u>limited</u> because teacher answers questions after having worked with student daily for 6-8 weeks.

Ⓟ Pearson                                    Screening and Evaluation Tools for Dyslexia

26

# At Risk vs. Not at Risk

| At Risk | Not at Risk |
|---|---|
| • Increase frequency and duration of interventions.<br><br>• Select a more intensive intervention program.<br><br>• Monitor student's academic performance.<br><br>• Refer student for comprehensive evaluation. | Monitor and support language and academic skills in general education setting. |

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia

27

27

# KTEA-3 and WIAT-III Dyslexia Index Scores

Ideal for screening

- brief administration time
- clinical sensitivity

Index scores are also sufficiently rigorous to contribute to a comprehensive diagnostic evaluation.

Breaux & Lichtenberger (2016).

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia

28

# KTEA-3 Dyslexia Index scores

- Two Dyslexia Index scores are provided for the KTEA–3: one for grades K–1, and another for grades 2–12
- Each of these Dyslexia Index scores are obtained by administering three subtests from either Form A or Form B of the KTEA–3
- The materials needed to administer and score the Dyslexia Index subtests are available as part of the KTEA–3 Comprehensive Form.

P Pearson                                               Screening and Evaluation Tools for Dyslexia 29

29

# Dyslexia Index Scores - Purposes

Evaluation
- The KTEA-3 Dyslexia Index scores can serve as a starting point for a more comprehensive psychoeducational test battery.
- If the Dyslexia Index results suggest that further testing is necessary, administer the KTEA–3 Comprehensive Form
- All standard scores from the Dyslexia Index subtests can validly be applied to a more extensive assessment using the KTEA–3 Comprehensive

P Pearson                                               Screening and Evaluation Tools for Dyslexia

30

# Dyslexia Index Scores: Features and Benefits

Useful as a quick dyslexia screener that can also contribute to a more in-depth subsequent evaluation using the KTEA-3 or WIAT-III (without re-administering those subtests)
- Excellent reliabilities (.90s) at every age/grade
- Strong clinical sensitivity
- Brief administration times
- Composite structures are based on clinical data as well as a strong empirical foundation
- Results are easy to interpret: 6 categories of Risk for Dyslexia

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia 31

31

# Dyslexia Index Scores: Features and Benefits

Included in each of the Dyslexia Index Manuals:
Dyslexia Index composite norms tables, reliability, and validity data
Score Computation Form and Graphical Profile (reproducible forms for hand scoring)
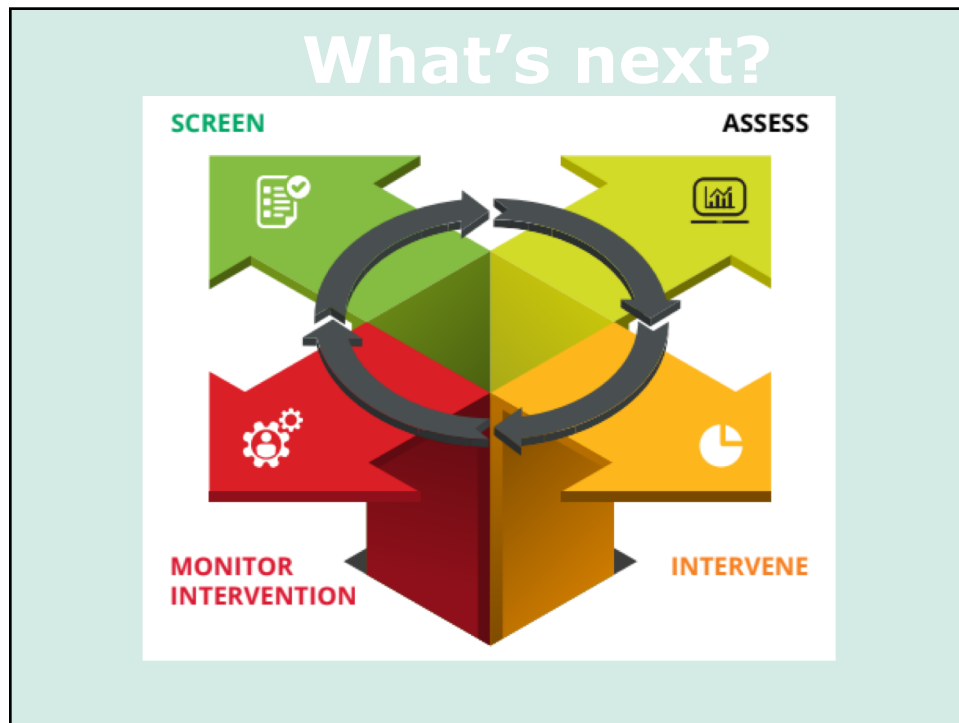Interpretation guidance and recommendations for next steps
Reproducible Response Booklet pages for Spelling subtest
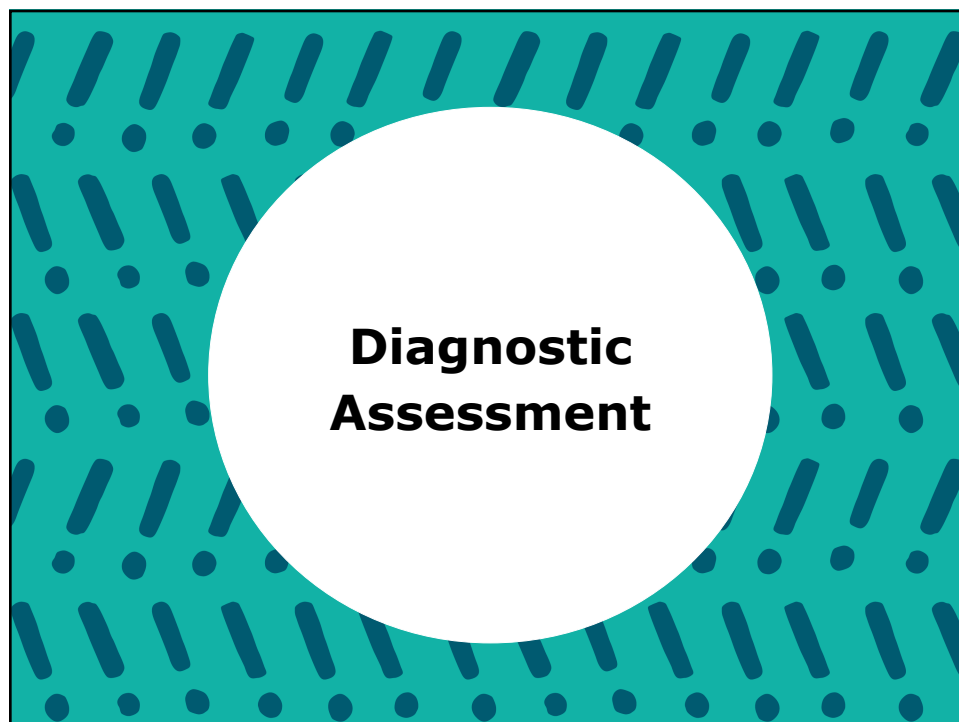*Manual can be found in Q-interactive or Digital Assessment Library*

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia

32

33



34

# How do I select tests for Diagnostic Assessment?

Test selection for Diagnostic Assessment should evaluate key components of Dyslexia

• Strengths

• Response to treatment (effective instruction)

• Potential areas of weakness

  • Symptoms
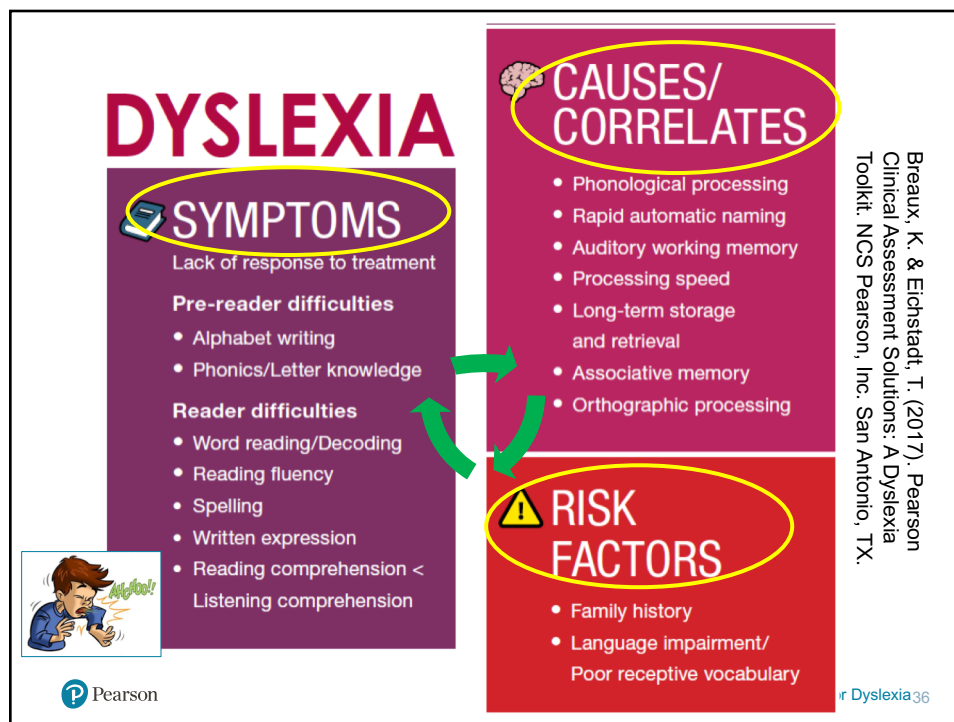  • Cognitive Correlates
  • Risk Factors

Psychometric support vs theoretical support

• Test for reading vs. for dyslexia

P Pearson

Screening and Evaluation Tools for Dyslexia

35



36

# Diagnostic Assessment Tools

| Key Areas for Dyslexia Assessment | KTEA-3 grades PK–12 Ages 4 – 25 | PAL-II Grades K–6 | WIAT-III Grades PK–12 Ages 4–50 | WRMT-III grades K–12 Ages 4–79 |
|---|---|---|---|---|
| Phonics Skills/ Letter Knowledge | • Letter & Word Recognition<br>• Letter Naming Facility<br>• Letter Checklist | Letters | Early Reading Skills: Skills Analysis: Naming Letters; Letter-Sound Correspondence | Letter Identification |
| Decoding Pseudowords | Nonsense Word Decoding | Pseudoword Decoding | Pseudoword Decoding | Word Attack |
| Word Reading | Letter & Word Recognition | | Word Reading | Word Identification |

Pearson

Screening and Evaluation Tools for Dyslexia

37

# Diagnostic Assessment Tools

| Key Areas for Dyslexia Assessment | KTEA-3 grades PK–12 Ages 4 – 25 | PAL-II Grades K–6 | WIAT-III Grades PK–12 Ages 4–50 | WRMT-III grades K–12 Ages 4–79 |
|---|---|---|---|---|
| Reading Fluency | • Word Recognition Fluency<br>• Decoding Fluency<br>• Silent Reading Fluency | • RAN-Words<br>• Morphological Decoding Fluency<br>• Sentence Sense | • Oral Reading Fluency<br>• Pseudoword Decoding Speed<br>• Word Reading Speed | Oral Reading Fluency |
| Spelling | Spelling | Word Choice | Spelling | |

Pearson

Screening and Evaluation Tools for Dyslexia

38

# Diagnostic Assessment Tools

| Key Areas for Dyslexia Assessment | KTEA-3 grades PK–12 Ages 4 – 25 | PAL-II Grades K–6 | WIAT-III Grades PK–12 Ages 4–50 | WRMT-III grades K–12 Ages 4–79 |
|---|---|---|---|---|
| **Written Expression** | • Written Expression<br>• Writing Fluency | • Sentence Writing<br>• Compositional Fluency<br>• Expository Note Taking and Report Writing | • Sentence Composition<br>• Essay Composition | |
| **Receptive Vocabulary** | Reading Vocabulary | Are They Related? | • Listening Comprehension<br>• Receptive Vocabulary | Word Comprehension |

Pearson

Screening and Evaluation Tools for Dyslexia

39

# Diagnostic Assessment Tools

| Key Areas for Dyslexia Assessment | KTEA-3 grades PK–12 Ages 4 – 25 | PAL-II Grades K–6 | WIAT-III Grades PK–12 Ages 4–50 | WRMT-III grades K–12 Ages 4–79 |
|---|---|---|---|---|
| **Rapid Naming** | • Object Naming Facility<br>• Letter Naming Facility | • RAN Letters<br>• RAN Letter Groups | | Rapid Automatic Naming |
| **Phonological Awareness** | Phonological Processing | • Rhyming<br>• Syllables<br>• Phonemes<br>• Rimes | Early Reading Skills SA: Phonological Awareness | Phonological Awareness |
| **Auditory Working Memory (Phonological Memory)** | Phonological Processing Error Analysis: Blending | • Sentences: Listening<br>• Letters<br>• Words | • Oral Expression<br>• Sentence Repetition<br>• Early Reading Skills: SA: Blending Sounds | |

Pearson

Screening and Evaluation Tools for Dyslexia

40

# Diagnostic Assessment Tools

| Key Areas for Dyslexia Assessment | KTEA-3 grades PK–12 Ages 4 – 25 | PAL-II Grades K–6 | WIAT-III Grades PK–12 Ages 4–50 | WRMT-III grades K–12 Ages 4–79 |
|---|---|---|---|---|
| **Secondary Areas** | | | | |
| **Reading Comprehension** | Reading Comprehension | • Does it Fit? <br> • Sentence Sense: Accuracy Score <br> • Sentence Structure | Reading Comprehension | Passage Comprehension |
| **Listening Comprehension** | Listening Comprehension | Sentences: Listening | Listening Comprehension: Oral Discourse Comprehension | Listening Comprehension |
| **Orthographic Processing** | Orthographic Processing Composite | • Receptive Coding <br> • Expressive Coding <br> • Word Choice | | |

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia

41

# Assessment of Intellectual Functioning

- The Pearson toolkit for dyslexia diagnostic evaluations also includes tests of intellectual functioning.

- Within the context of a dyslexia evaluation, tests of intellectual functioning are used for:

| PSW Analysis | | Differential Diagnosis |

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia

42

21

# Cognitive Processing Areas for Dyslexia Evaluation

**WISC-V Measures of Key Cognitive Processing Areas for a Dyslexia Evaluation**

| Cognitive Processing Area | WISC-V Index Score |
|---|---|
| Auditory working memory (phonological memory) | Auditory Working Memory (AWMI) |
| Rapid automatic naming | Naming Speed Index (NSI) |
| Verbal comprehension and reasoning | Verbal Comprehension Index (VCI) |
| Processing speed | Processing Speed Index (PSI) |
| Long-term storage and retrieval | Storage and Retrieval Index (SRI) |
| Associative memory (learning efficiency) | Symbol Translation Index (STI) |

P Pearson

Screening and Evaluation Tools for Dyslexia

43

# Intervention

44

# Intervention Tools

Pearson Dyslexia Toolkit

- Intervention Guide for Learning Disability (LD) Subtypes
- Process Assessment of the Learner (PAL) Research-Based Reading and Writing Lessons
- KTEA-3 teaching objectives and intervention statements
- WIAT-III intervention goal statements
- SPELL links

Pearson

Screening and Evaluation Tools for Dyslexia

45

# Intervention Guide for LD Subtypes

**7 reading-related subtypes**

- **Phonological**
- **Orthographic**
- **Mixed Phonological-Orthographic**
- **Language (OWL-LD, SLI, LLD)**
- **Comprehension**
- **Fluency/Naming speed**
- **Global**

Pearson

Screening and Evaluation Tools for Dyslexia

46

## Intervention Planning Based on Subtypes of Reading-Related Learning Disabilities

| Phonological Dyslexia | Orthographic Dyslexia |
| --- | --- |
| • Phonological core deficit<br><br>• Rely on visual and orthographic cues<br><br>• Rarely use letter-sound conversion<br><br>• Read irregular words better than pseudowords<br><br>• Listening comprehension stronger than reading comprehension | • Difficulty using visual-lexical route to reading and writing words<br><br>• Rely on phonological route<br><br>• Sound out words letter-by-letter<br><br>• Over-rely on sound-symbol relationships<br><br>• Pseudoword reading better than irregular word reading<br><br>• Listening comprehension stronger than reading comprehension |

P Pearson

Screening and Evaluation Tools for Dyslexia

47

## Intervention Planning Based on Subtypes of Reading-Related Learning Disabilities

| Mixed Phonological-Orthographic Dyslexia |
| --- |
| • Severely impaired with difficulty using phonological route as well as the visual-lexical route to reading and writing words<br><br>• No consistent pattern of errors<br><br>• Difficulty with reading regular, irregular, and pseudowords<br><br>• Listening comprehension is stronger than reading comprehension |

P Pearson

Screening and Evaluation Tools for Dyslexia

48

24

## Intervention Planning Based on Subtypes of Reading-Related Learning Disabilities

| Language | • Oral and Written Language Learning Disability (OWL-LD)<br>• Poor listening and reading comprehension |
|---|---|
| Fluency | • Poor reading fluency due to naming speed deficit<br>• Able to read and decode words accurately with adequate phonological processing skills |
| Global | • Referred to as "garden variety" poor readers<br>• Difficulty with all reading-related skills |

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia

49

## Intervention Planning Based on Subtypes of Reading-Related Learning Disabilities

| Comprehension | • Specific comprehension deficit, sometimes referred to as hyperlexia<br>• Relatively rare and sometimes symptom of pervasive developmental disorder<br>• Poor listening and reading comprehension<br>• Fluency and accuracy of word recognition and decoding skills intact |
|---|---|

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia

50

25

# Intervention Guide for LD Subtypes

**Hallmark indicators: skills/abilities that define or differentiate between subtypes.**

Cognitive Ability

Phonological Processing

Rapid Automatic Naming

Listening Comprehension

Orthographic Coding

Oral Grammar

Non-word Reading

Word Recognition

Reading Comprehension

Reading Fluency

Spelling

Pearson

Dyslexia Identification

51

# Intervention Guide for LD Subtypes

**Ancillary indicators: skills/abilities that are used   to tailor recommendations.**

Handwriting legibility and speed {dysgraphia}

Verbal comprehension and reasoning

Auditory verbal working memory

Processing speed

Perceptual reasoning

Pearson

Screening and Evaluation Dyslexia Identification

52

# Intervention Report

DESCRIPTION OF SUBTYPE: MIXED PHONOLOGICAL/
ORTHOGRAPHIC

X's pattern of performance across key cognitive,
language, and academic domains is similar to that
of students with a mixed phonological and
orthographic deficit.

℗ Pearson

Screening and Evaluation Tools for Dyslexia

53

# Intervention Guide for LD Subtypes

Essentials to remember:

- The focus is intervention, not diagnosis
- The skill profile relies on judgment, not calculation
- Interventions are not guaranteed, expect some trial-and-error

℗ Pearson

Screening and Evaluation Tools for Dyslexia

54

# Intervention Report

Students with a mixed deficit have difficulty mentally representing the sound patterns of the words in their language, which causes great difficulty in using the phonological route to reading and spelling, as well as difficulty in using the visual-lexical route to reading and writing words.

P Pearson

Screening and Evaluation Tools for Dyslexia

55

# Dysgraphia

X's poor handwriting legibility and lack of automaticity suggests that he may also benefit from interventions designed for students with dysgraphia, a disorder that affects handwriting, spelling, and written expression ability.

P Pearson

Screening and Evaluation Tools for Dyslexia

56

# Double Deficit

X's pattern of weaknesses indicates a double deficit in phonological processing and naming speed.

Students with slow naming speeds tend to need more exposure to new words before they can read them automatically due to difficulty developing orthographic representations of words.

57

# Double Deficit

Double deficits in phonological processing and naming speed typically lead to significant reading difficulty due to challenges students experience with both the phonological and orthographic aspects of reading.

58

**Progress Monitoring**

59

## Progress Monitoring Tools

Pearson Dyslexia Toolkit

- Growth Scale Values (KTEA-3, WIAT-III, WRMT-III)
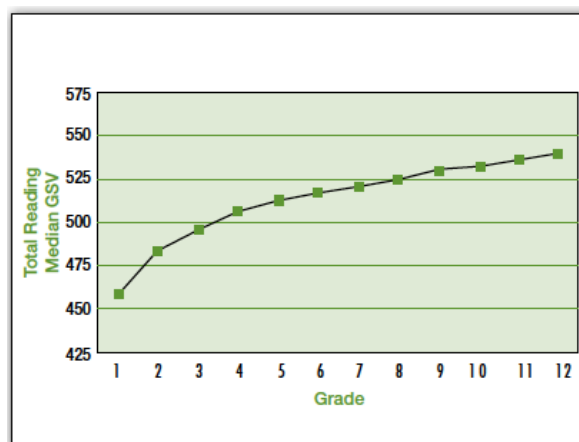- Relative Performance Index (WRMT-III)
- aimswebPlus

60

30

# Growth Scale Values (GSV)

- Equal interval scale

- Measure ability on a developmental continuum

- Compare performance over time

- Measure growth and track individual progress

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia
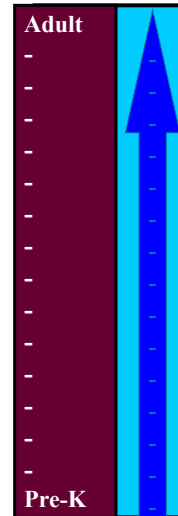
61

# Developmental Change



Figure 6.1  WRMT–III median GSV growth curve for the Total Reading cluster by grade

Ⓟ Pearson

Screening and Evaluation Tools for Dyslexia

62

# References and Resources

Berninger, V. W. (2003). *PAL research-based reading and writing lessons*. San Antonio, TX: Pearson.

Berninger, V. W. (2007). PAL-II user's guide. San Antonio, TX: Pearson.

Breaux, K. C., & Lichtenberger, E. O. (2016). Essentials of KTEA–3 and WIAT–III assessment. Hoboken, NJ: Wiley.

63

# References and Resources

Feifer, S. G., & De Fina, P. A. (2000). The neuropsychology of reading disorders: Diagnosis and intervention workbook. Middletown, MD: School Neuropsych Press, LLC.

Hart, B., & Risley, T. (2002). Meaningful Differences in the Everyday Experience of Young American Children. Baltimore, MD: Paul H. Brookes.

Joseph, L. M. (2006). Understanding, assessing, and intervening on reading problems. Bethesda, MD: NASP.

64

## References and Resources

National Institute of Child Health and Human Development. (2nd ed. June 2003). Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.

Shaywitz, S. (2003). *Overcoming dyslexia: A new and complete science-based program for reading problems at any level*. New York: Vintage Books.

P Pearson

Screening and Evaluation Tools for Dyslexia

65

# Questions

Anne-Marie.Kimbell@Pearson.com
Diana.Zinsmeister@pearson.com

66